9/14/09 7A

TOWN OF ACTON
INTERDEPARTMENTAL COMMUNICATION

Date: September 11, 2009

To: Manager Department

From: Engineering Department
Bruce M. Stamski, P.E., Town Engineer/Director of Public Works

Re: Spruce Street Tulip Tree Hearing

Per the direction of the Board of Selectmen the Engineering Department has explored alternatives to providing a Mass Architectural Access Board (MAAB) compliant sidewalk on Spruce Street. As you are aware a tulip tree has grown over the years and its root system has rendered the sidewalk impassable. Pedestrians have to enter the road at the tree creating an unsafe situation. Spruce Street is a major walking route to the Gates School and the West Acton Post Office's parking lot is located directly across from the Tulip Tree.

Three proposals from citizens were submitted for consideration.

Mr. Aidan Smith of 61 Spruce Street submitted sketches of a very low cost (less than $500) solution to the problem involving painted crosswalks. These alternatives would have the school children crossing mid- block. The Police Department, School Department and The Engineering Department are not in favor of this proposal. The area is very busy with cars backing out of the Post Office, parents picking up their kids at Gates School and an occasional bus. Having the children crossing the street in the middle of this traffic is an unacceptable risk.

Mr Thomas Doolittle, a landscape architect submitted a report with sketches of a proposal to have the sidewalk narrow to 3 feet in width, installing a curbing 10 inches high at the tree and replacing 50 feet of sidewalk. The Engineering Department estimates the cost of this proposal to be in the vicinity of $5000. Per Mr. Doolittle's report "an interpretation of the regulations should be sought" to confirm that the narrowing of the walk for a short distance is acceptable. I have been in contact with the compliance officer at MAAB. He was to write a memo on this, however he is on vacation until Monday. Assuming Mr. Doolittle's proposal is MAAB compliant the Engineering Department still has some major concerns and does not recommend this proposal for the following reasons.

1. A 10 inch high curb (normal curb height 6 inches) coupled with the narrow width creates a hazard to pedestrians. A miscue by a child on a bike, a person in wheelchair or using a walker will have them falling into the street.

2. Our sidewalk plows need a minimum of 4'-6" clearance. The manufacture has told us that the machine will flip over if it goes off a curbing more than 8 inches high. The Highway Department will have to dispatch a snow blower to clear this area thereby slowing our ability to get the sidewalks passable after a snowstorm.

3. The tulip tree will continue to grow. Since 1993 the tree has grown from 18 inches in diameter to 24 inches. With the absolute minimum width of 3 feet butting up to the tree it will only take a few years for the sidewalk to be non compliant in width.

4. This proposal requires installing granite curbing extending below the road surface by 14 inches. The Tree Warden has expressed concerns about damaging the root system of the tree digging this deep 3 feet off the tree.

Mr Klinger, whose property abuts the tulip tree, suggests something similar to Doolittle's proposal with an added speed bump. Our objections to the narrow sidewalk are noted above. Speed is not an issue so a speed bump is not recommended. His plan also requires rerouting buses which would require approval of the School Department. He has an estimate of $2500 which does not include the required curbing or the cost of the speed bump. The total cost is probably 3 times his estimate.

The Engineering Department has identified two possible options to removing the tulip tree.

1. Obtain an easement from the Abutter (The Klingers) and relocate the sidewalk in back of the tree. This would involve rebuilding 50 feet of walk and relocating the abutter's ornamental fence. The Engineering Department estimates this will cost in the vicinity of $3500. The sidewalk will be 12.5 feet off the Klingers house at its closest and require relocating a nicely planted garden area. I believe Mr. Klinger will speak to the acceptability of this option at the hearing.

2. Shift the sidewalk and Spruce Street over sufficiently to have a 5 foot wide sidewalk with a 6 inch high curb within the Town's Right of Way. To accomplish this 130 feet of roadway and sidewalk will have to be removed and reconstructed. The roadway will have a slight curve and have to have a painted centerline and fog lines (white lines near the edge of pavement). The Engineering Department estimates the cost of this opting to be in the vicinity of $17,000.

Recommendation

If an easement can be obtained from the Klingers I recommend relocating the sidewalk to the back of tree.

If an easement can not be obtained I recommend removing the tree, repairing the sidewalk and planting a replacement tree at a cost of around $2000.

Aidan Smith Proposal

Aidan Smith
61 Spruce St.
Acton, MA

To: Town of Acton
Steve Ledoux- Town Manager
Bruce Stamski- Engineering
Paulina Knibbe- Chair, Board of Selectmen

Dear Friends:

I would like to present to all of you a proposal that I raised during the last Selectmen's Meeting where the topic of the Tulip tree on Spruce Street was discussed. At that time, it appeared to me that only the removal of the tree had received significant consideration and cost estimating. During that Meeting, I had requested that any and all reasonable options be analyzed and considered before a final decision was reached. My neighbor Mr. Klinger has forwarded me some additional options and estimates recently, but I would very much like to have this option added for consideration.

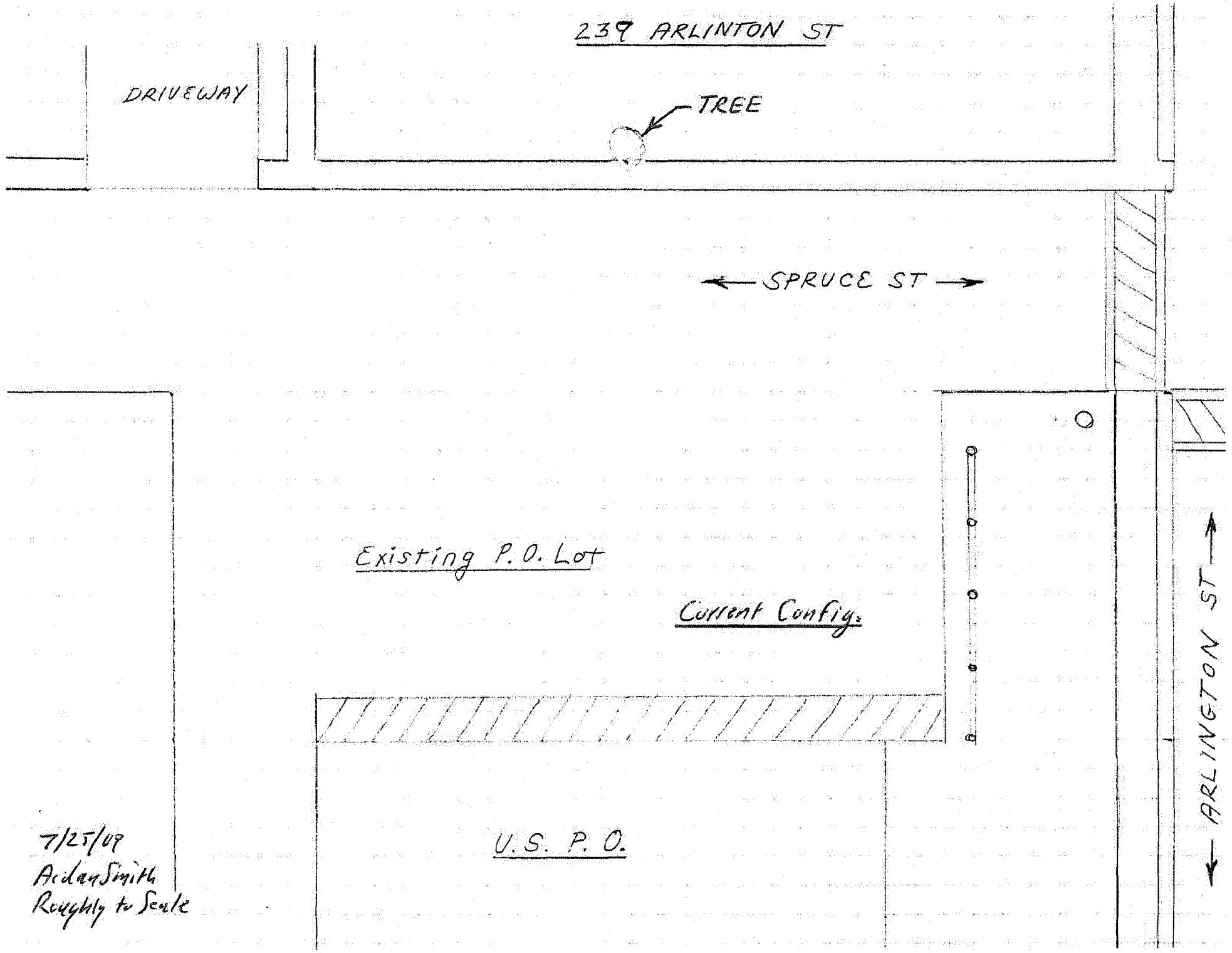
The proposal starts with the creation of a small new sidewalk section on the even side of Spruce Street, connecting the existing sidewalk on Arlington Street with the existing paved lot for the US Post Office property. The estimated length of new sidewalk is 8-10 linear feet. The Town could then utilize a new painted crosswalk configuration that would cross some (or all) of the street entrance to the Post Office parking lot, then cross Spruce Street to connect with the existing sidewalk North of the tree that is causing the issue. I have created several sketches of the site including an "as is" and three potential crosswalk options. I'm sure other configurations are possible as well.

I have seen crosswalks performing similar functions recently in Harvard, MA (General Store intersection of Routes 110 and 111) as well as in Norwich VT. In the case of the Norwich VT example, the crosswalk runs the full length of a parking lot and gas station area in front of a general store. The length of that crosswalk is easily two to three times the length of the Spruce St. Post Office parking lot.

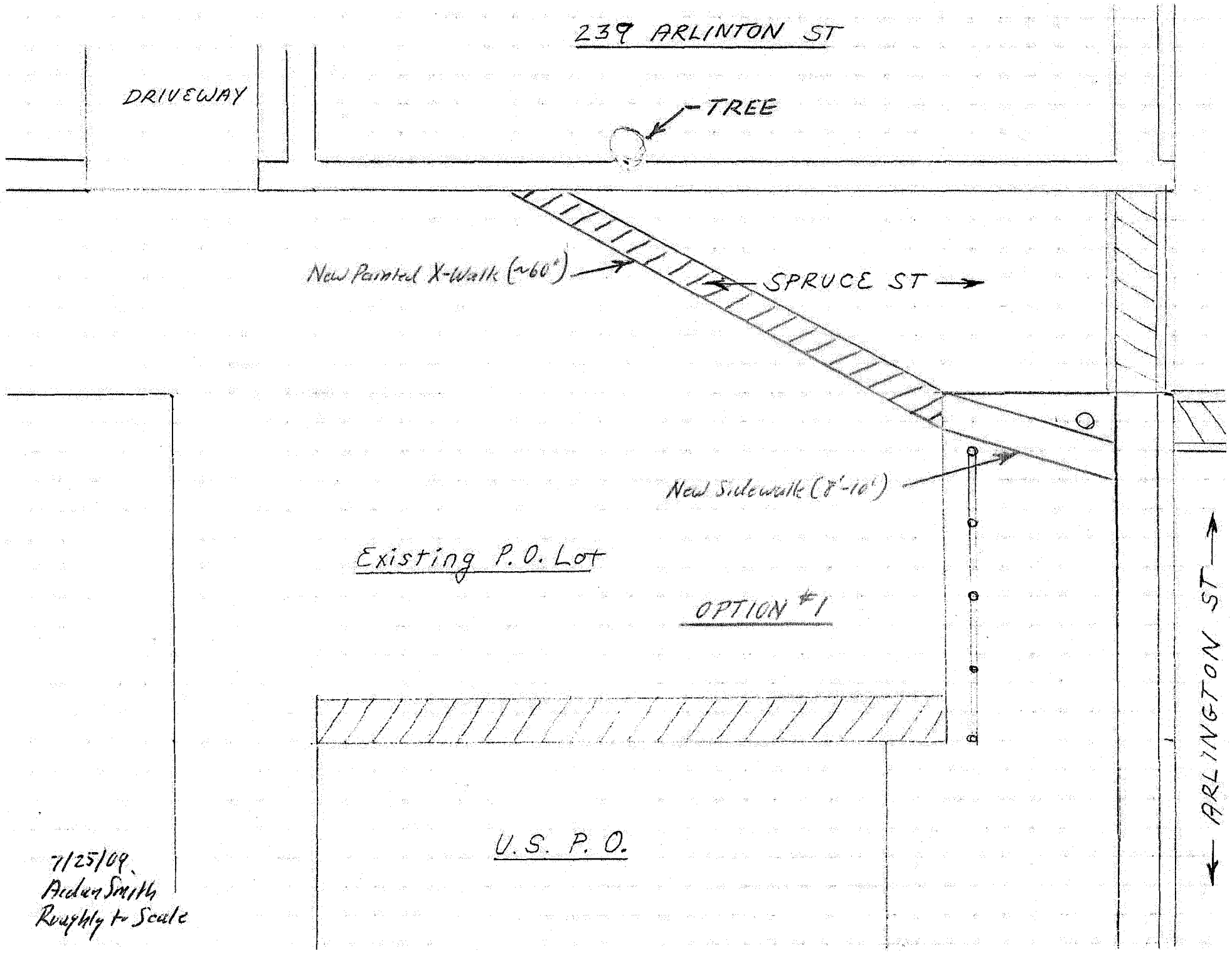
Thank you all in advance for your time and continued investigation into alternative solutions to this issue.

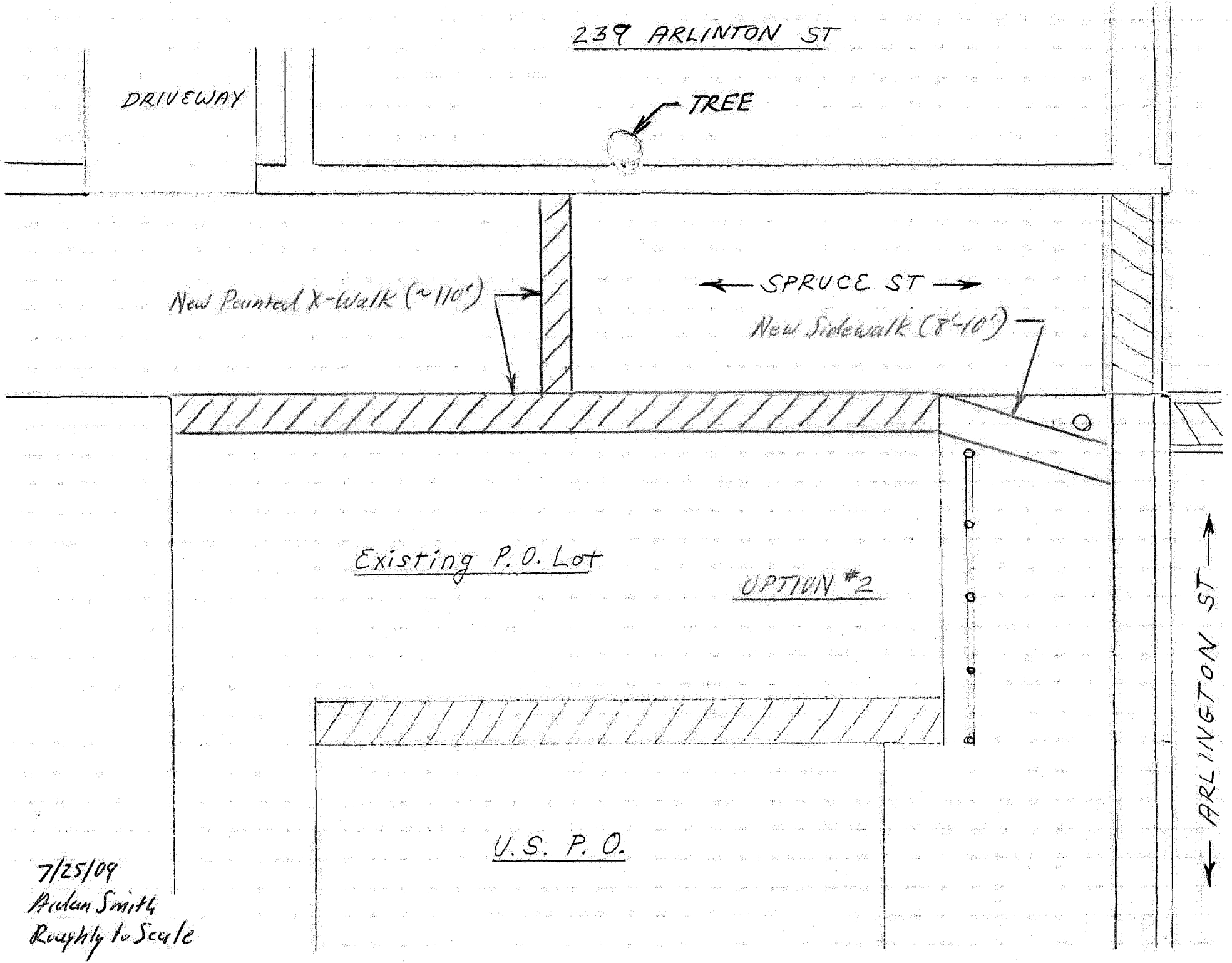
Sincerely
Aidan Smith

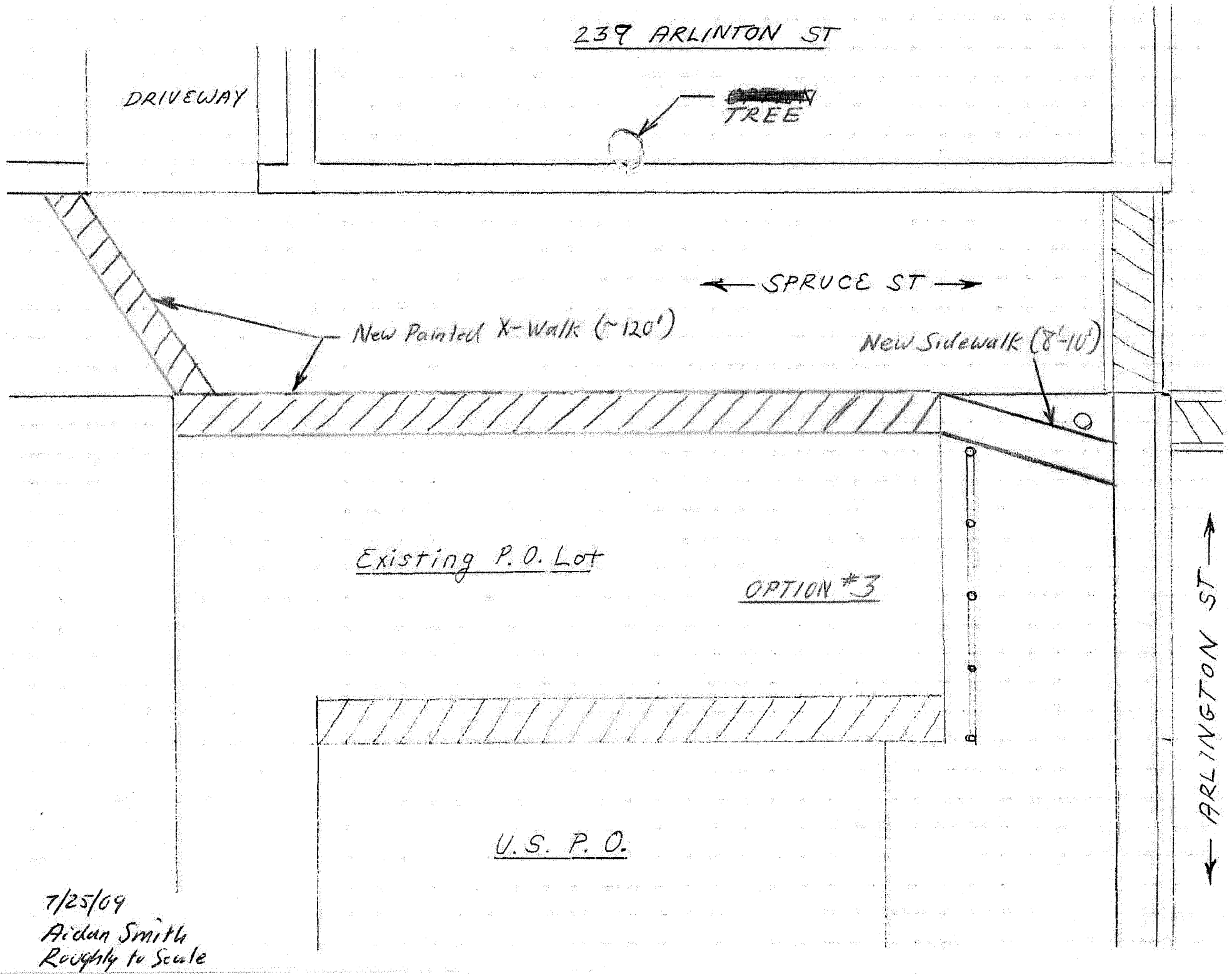
Attachments
"As Is" Sketch
Three Optional Crosswalk Configurations



7/25/09
Aidan Smith
Roughly to Scale


239 ARLINTON ST
DRIVEWAY
TREE
New Painted X-Walk (~60')
SPRUCE ST
New Sidewalk (8'-10')
Existing P.O. Lot
OPTION #1
U.S. P.O.
ARLINGTON ST
7/25/09
Arden Smith
Roughly to Scale


239 ARLINTON ST
DRIVEWAY
TREE
New Painted X-Walk (~110')
SPRUCE ST
New Sidewalk (8'-10')
Existing P.O. Lot
OPTION #2
U.S. P.O.
ARLINGTON ST
7/25/09
Arden Smith
Roughly to Scale


239 ARLINTON ST
DRIVEWAY
TREE
SPRUCE ST
New Painted X-Walk (~120')
New Sidewalk (8'-10')
Existing P.O. Lot
OPTION #3
U.S. P.O.
ARLINGTON ST
7/25/09
Aidan Smith
Roughly to Scale

Bruce Stamski

From: Robert Cowan
Sent: Monday, August 10, 2009 10:39 AM
To: Frank Widmayer
Cc: Bruce Stamski
Subject: Spruce St sidewalk

Putting a sidewalk on the other side of the street would not be a safe recommendation. That would be just moving the problem. Pedestrian traffic mingled in with vehicles turning and backing from the post office parking lot is not the remedy to this problem. The current sidewalk would be safe with the removal of the tree in question.

Bob Cowan

Bruce Stamski

From: JD Head [jdhead@mail.ab.mec.edu]
Sent: Monday, August 10, 2009 1:28 PM
To: Bruce Stamski
Cc: Manager Department
Subject: Re: FW: Alternative Proposal for Spruce Street Tulip Tree Issue

Beyond the safety issues we all have about kids walking behind the cars in the PO lot, you also have ADA compliance problems with the alternatives proposed. Crosswalks have to be 90 degrees and there are specifics in regards to the curb cuts landing areas cross slope etc... I would run it by Frank Ramsbottom before you go to far down the path of entertaining the alternatives. ....I guess option 2 is a possibility.

Just some food for thought.

Tom Doolittle Proposal

Sidewalk Repairs at Spruce Street
26 April 2009

Background:
A large (60 ft. height, 18" cal.) tulip tree is growing at the back edge of the sidewalk on Spruce Street (across from the West Acton Post Office), causing the sidewalk pavement to lift and buckle and creating an unsafe condition for pedestrians, as well as making the sidewalk non-compliant with accessibility requirements. The town has recommended removal of the tree, but residents in the neighborhood are very anxious to see the tree remain, as it is a significant element in the area landscape.

I was requested to review the growing conditions of the tree, and the physical condition of the sidewalk, and provide an alternate recommendation for preserving the tree while making the sidewalk safe and compliant with accessibility regulations.

The town provided an existing conditions survey to me as background for use in developing alternatives. I also made two visits to the site to take measurements and observe the current conditions of the tree and the sidewalk.

Accessibility Regulations:
There are two accessibility standards that apply to any built environment: the federal Americans with Disabilities Act (ADA), which has developed a set of guidelines for use in the design and renovation of buildings and sites, and the Massachusetts Architectural Access Board (MAAB), which is a state agency that has promulgated its own regulations. Generally, the two standards are very similar, but there are differences between the two. When a project encounters an area where the two are not in agreement, it is usually the "higher" standard that is enforced.

In the case of the Spruce Street sidewalk, the controlling ADA standards are those for an "accessible route" (Section 4.3), which is applied to all interior and exterior walkways. The MAAB contains a similar definition for an accessible route (Section 20), closely matching the ADA standards, but also provides standards for Walkways (Section 22), which specifically covers sidewalks and exterior paths that are not part of the accessible route to a building or other structure. This set of standards would be considered the higher standard of the two, as they apply specifically to the condition presented at the site.

The MAAB standards for walkways require that the width of a walkway be 48" minimum, not including any adjacent curbstone, and an unobstructed travel path of 36" clear must be provided. In my experience, these requirements have been interpreted to allow the paved sidewalk to be narrowed to 36" for short durations (5' or less) to allow passage through narrow openings or for the placement of signage, utility poles, and other elements along the edge of the walkway. The existing condition of the tulip tree I believe would fall under this category. An interpretation of the regulations should be sought to confirm this interpretation. The regulations are very explicit that the top of any curbstone cannot be counted as part of the overall width of the sidewalk.

Both the ADA and MAAB standards require a maximum cross-pitch of 2% for sidewalks/walkways, and a maximum slope of 1:20 along the running length of the path.

Site Investigations:
My goal in looking at the site was to determine what the potential was for reducing the cross-slope of the sidewalk through the lowering of the pavement or raising of the curbline; and to assess the means for achieving the MAAB regulations relative to walkways.

In looking at the existing conditions of the cross-slope, the existing curb height is roughly 4-1/2" (confirmed on the town-provided survey). This height is below normal curb height (typically 6"), but not atypical for a bituminous concrete curb that has been in place for several years. Raising the curb to a full height of 6" will not by itself solve the problem.

I also did some digging at the edge of the sidewalk pavement adjacent to the tree, and found that, while there are roots present on the street side of the tree, they appear to not extend very far towards the street, or at least dive fairly quickly around the immediate area of the trunk. Using my fingers, I was able to excavate down about 4-1/2" below the edge of the adjacent pavement; I believe that there is more depth available, but removal of more of the sidewalk pavement would be required to determine the actual depth that could be safely excavated without further damaging the roots.

Using a level, I measured the elevation from the road surface to the top edge of the existing pavement, and found it to be approximately 15-1/2". If I am correct in my assumption, the differential between the road surface and the top of any root is about 11".

The width from the face of the existing curb to the edge of the pavement at the narrowest point adjacent to the tree is approximately 39".

Recommendations:
I believe that, with careful excavation around the perimeter of the tree, additional depth can be found above the tree toot system, allowing the pavement to be lowered more than the 4-1/2" I observed. If this is true, I believe that by building a curb that is approximately 10" tall, a walking surface that complies with the cross-pitch and running slope requirements of MAAB can be constructed. To do this, a curb that is taller than normal (probably about 10" at the face) would have to be installed, and a section of the sidewalk about 50' long would have to be reconstructed. The curb height is necessary to create an acceptable cross-pitch; the length of the sidewalk reconstruction is required to meet the running slope maximums on either side of the tree.

Construction of the curb would be a monolithic curb, such as granite or precast or cast-in-place concrete. The curb would have to have sufficient depth to resist overturning: if granite or precast were to be used, a bridge curb section, which is 24" deep instead of a typical roadway curb of 18", could be specified. While a 10" high curb is a very high in comparison to the existing condition or many curbs, it is not unusual. As noted above,

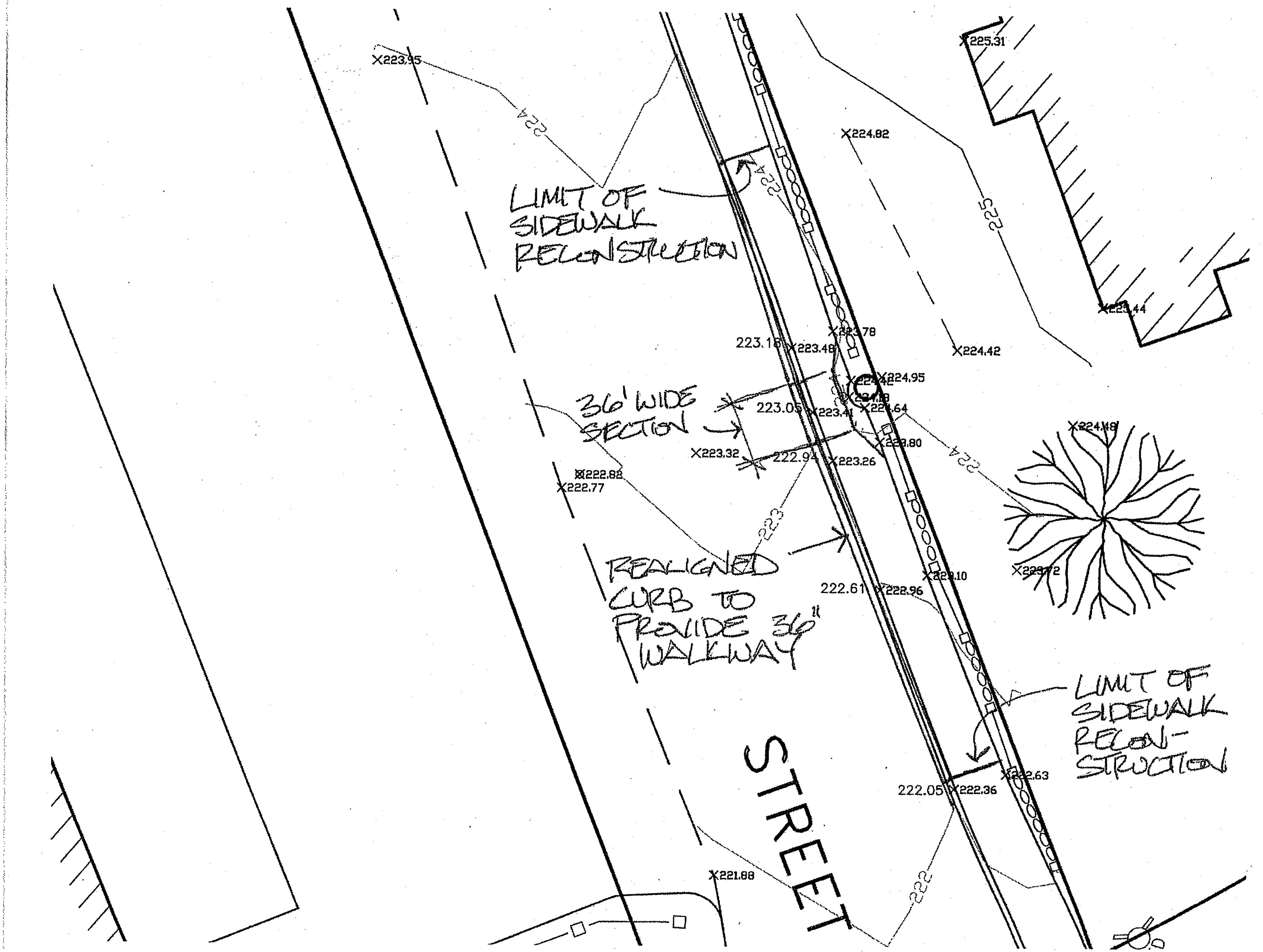
bridge curbing is usually installed with an 8" or 10" face; in the City of Boston, curb heights are exaggerated at catch basins resulting in a 9" reveal. Also, many communities now install curbs with a 7" reveal initially, so that when the street is resurfaced, the reveal will still be approximately 6". The biggest impact of such a high curb would be the ability (or lack thereof) to open a car door against it; in this particular instance, cars are very seldom parked along this curb due to the head-in parking spaces across the street at the post office.

To meet the width requirement of MAAB, the new curb would have to be installed with its back face approximately at the front face of the existing curb; this would narrow the pavement width along Spruce Street by roughly 6". The existing width of the street is roughly 22 feet in this area; a width of 21'-6" should not be problematic, especially given that the post office parking area is across the street, and there is therefore no hard curb line on that side of the street. If the widening was done as a gradual taper through the length of the sidewalk reconstruction, it is unlikely that it would be noticed, particularly as the existing curb line is not perfectly straight, with the street narrowing to just over 20' to the north of the site.

To meet the running slope requirements of MAAB, approximately 30' of sidewalk would have to be reconstructed to the south of the tree, and 10' to 20' feet to the north (this is approximate; I did not have sufficient grade information to establish an accurate length).

Several people have asked me if rubber sidewalk material would be appropriate for the reconstructed sidewalk. In general, I think this is fine, but I would limit the rubber section to immediately around the tree. The advantage to a rubber sidewalk is that it would have some give and flex if the tree roots continued to grow, resulting in less deterioration of the sidewalk surface and maintaining a better surface for walking. The disadvantage to the rubber sidewalk material is that it comes in a standard thickness of 1.875", whereas bituminous concrete can installed in variable thicknesses. While 2" of bituminous concrete would be the preferred thickness, a thinner course could be used to reduce overall curb height; bituminous concrete also provides the ability to mold the material around the constraints of the root system.

Next Steps:
I recommend that the town do some further investigation around the tree by demolishing the sidewalk and hand excavating to determine the exact location and depth of the tree roots and to develop a final critical cross-section at the tree to determine curb height, which will set many parameters for the work. I assume that the town would install this sidewalk repair with its own forces, which would allow greater flexibility in developing a design that could easily be implemented on-site.


LIMIT OF SIDEWALK RECONSTRUCTION
36' WIDE SECTION
REALIGNED CURB TO PROVIDE 36" WALKWAY
LIMIT OF SIDEWALK RECON-STRUCTION
STREET
X223.95
X225.31
X224.82
224
225
223.15
X223.48
X223.78
X224.42
X224.95
223.05
X223.41
X223.32
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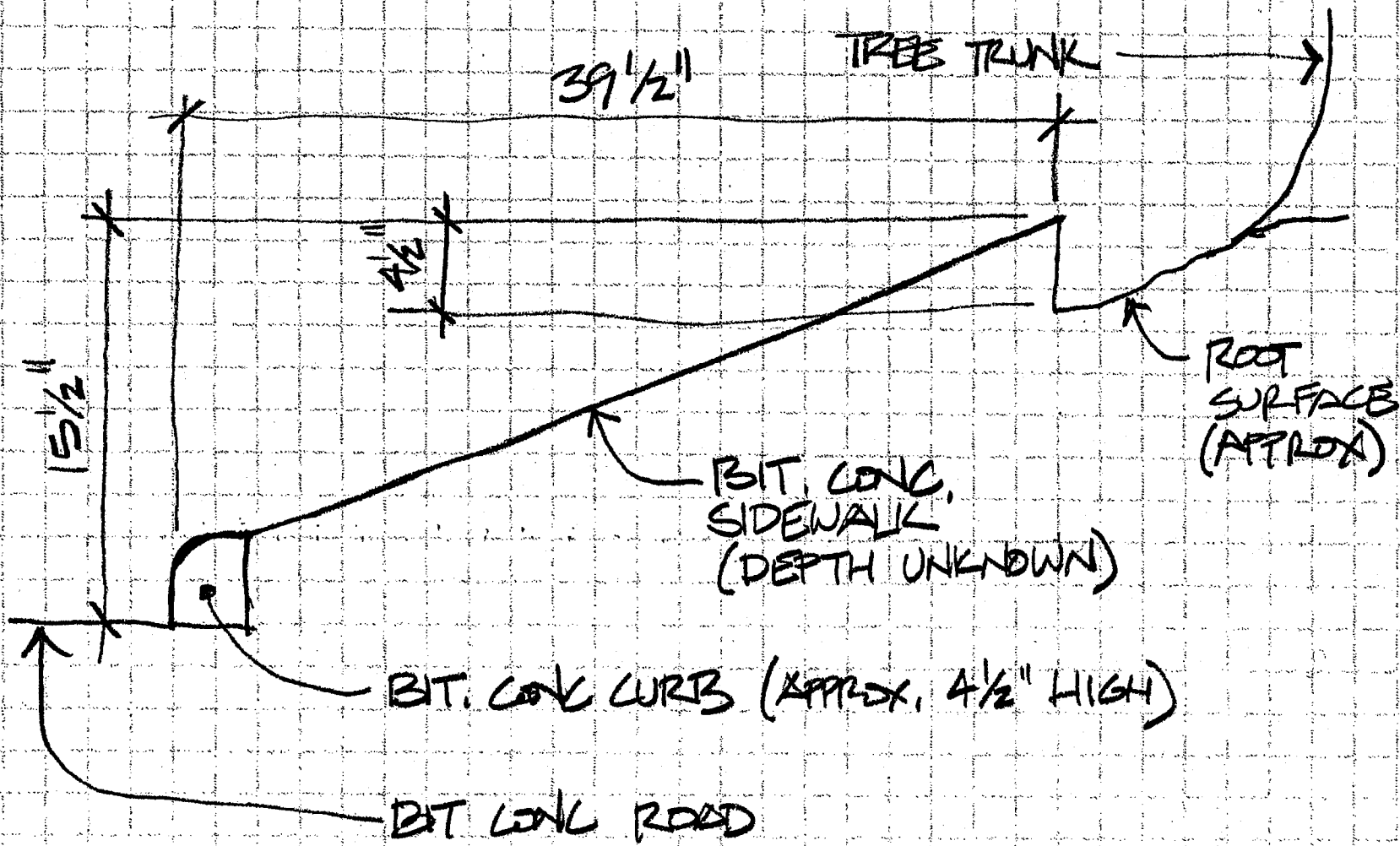
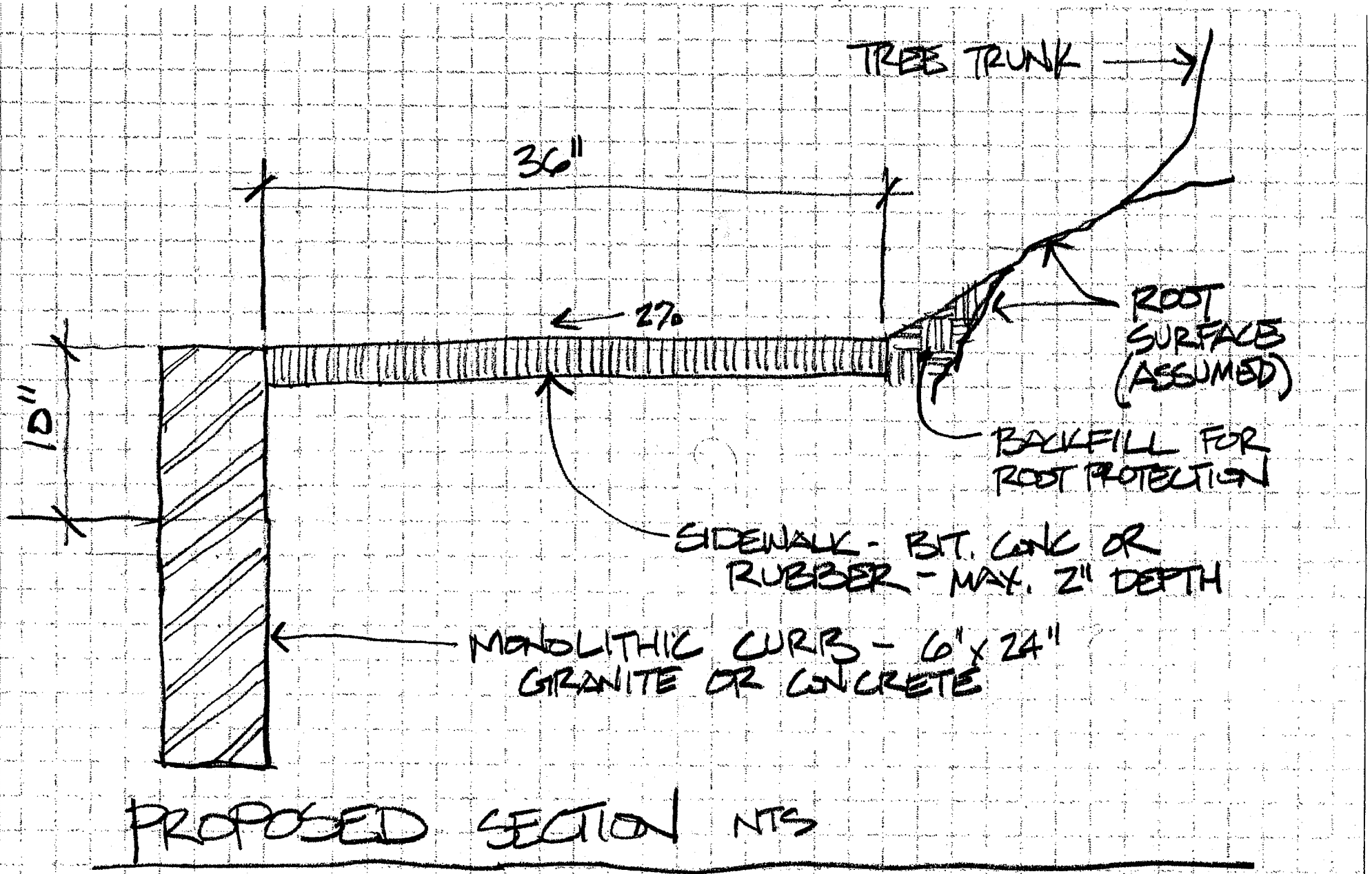


EXISTING CONDITIONS NTS



PROPOSED SECTION NTS

Bruce Stamski

From: Thomas R Doolittle [trdoolit@mac.com]
Sent: Tuesday, August 11, 2009 12:30 PM
To: Bruce Stamski
Cc: Manager Department; Engineering Department; Municipal Properties Department
Subject: Re: Spruce Street Sidewalk

Bruce:
I apologize for the delay in responding - this has been an unusually busy summer.

With regard to your questions in the May 28 message, I have not obtained an interpretation from MAAB on this matter and do not intend to: as I am neither the project's proponent (that would be the Town) or designer of record, it is not within my purview to seek such an interpretation; I can't legally represent the Town in such a process. However, I did take the opportunity to consult some of my professional associates regarding the suggested approach, including the disability coordinator of a major institution in Cambridge, and they collectively agreed that MAAB would have no issue with it, as it provides functional accommodation (the 36" accessible way) that meets the underlying criteria of the guidelines. In fact, one person said they wouldn't even bother going to MAAB to seek a variance, partly because it was such a minor deviation from the guidelines that MAAB wouldn't be concerned about it, and partly because there were likely other violations of the guidelines within the sidewalk system. There was also no concern regarding the suggested increase to the height of the curb from an accessibility viewpoint.

As to digging up the sidewalk to look at the roots, I would be happy to observe whatever you might turn up. I work in Cambridge, so seeing the site at the end of the day would be best for me. I will be on vacation the week of Aug. 16-20.

Tom

On Jul 31, 2009, at 10:51 AM, Bruce Stamski wrote:

> Tom,
> The Selectmen want to reschedule the hearing on the Tulip Tree. Please let me know by August 7th if you are planning to make a presentation at the hearing. Also if you want to dig around the roots of the Tulip Tree please give me a call so we can schedule.
> Thanks,
> Bruce M. Stamski
> Town Engineer/Director of Public Works
>
> ---
>
> **From:** Bruce Stamski
> **Sent:** Thursday, May 28, 2009 10:39 AM
> **To:** 'trdoolit@mac.com'
> **Cc:** Manager Department; Engineering Department; Municipal Properties Department
> **Subject:** Spruce Street Sidewalk
>
> Tom,
> As you are aware we requested the Selectmen to postpone the Spruce Street until this summer so that you can obtain the additional information you requested.
> We will be available to dig around the roots of the tulip tree after schools are closed for the

summer. We can obtain the location and elevations of the trees root system.
In your report you said that for your proposal to be acceptable "an interpretation of the regulations should be sought to confirm this interpretation". Have you obtained this interpretation? If you have not please let us know when you do so we can reschedule the hearing.

Having said the above, please be advised I will not recommend the to Selectmen that a very high curb coupled with a narrow sidewalk be constructed
regardless if it meets the regulations or not. The combination creates a hazard to pedestrians. In addition we have to assume the tree will keep growing and that in a year or two we will have additional root damage to contend with. I would be hard pressed to recommend spending approximately 5K to build a substandard sidewalk which may have to be redone in a couple of years.

Sincerely,
Bruce M. Stamski
Town Engineer/Director of Public Works

Mike Klinger Proposal

Bruce Stamski

From: Michael Klinger [mklinger@anzuglobal.com]
Sent: Tuesday, September 08, 2009 7:56 AM
To: Bruce Stamski; Manager Department; Steve Ledoux; Municipal Properties Department
Cc: trdoolit@mac.com
Subject: RE: Spruce Street Sidewalk options
Attachments: sidewalk paving Nashoba estimate TREE.doc; New Compressed (zipped) Folder.zip

Steve and the Town,

For the Town Meeting on 9/14, would like to propose a fourth option regarding the Tulip Tree in West Acton. Would appreciate five minutes of your time to present this at the meeting at 8:15PM.

Option 4- rebuild 80' of sidewalk to gradually raise and lower the sidewalk to accommodate the current bump. Put in a speed bump near the tree, reroute bus traffic to the service road and use a geotextile porous fabric for the area around the roots to allow for gradual expansion from any root growth.

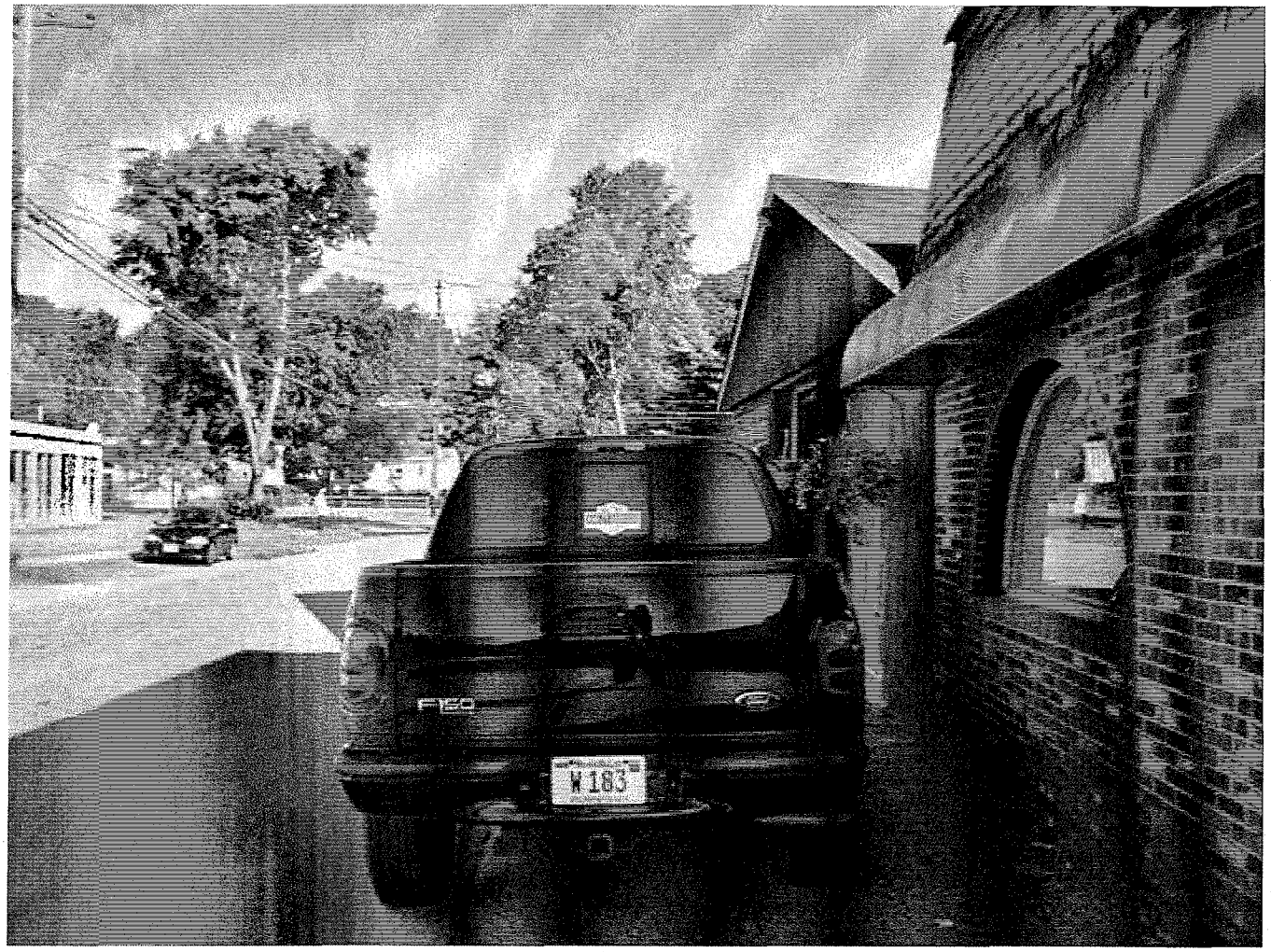
1) The **COST** to regrade the sidewalk is approximately $2500(see attached quote from Nashoba paving)
2) The **SAFETY** concern expressed by multiple parents in the neighborhood relates to buses using Spruce street, as opposed to the Service road and cars using the road as a pass through(see speed bump). If the two feet of sidewalk is improved, that is an added plus.
3) **LONGEVITY** of a repair needs to be determined by pulling up the sidewalk and looking at the roots. Mr. Tom Doolittle has offered to work with the Town Engineer to schedule a time to do this. Have spoken to two tree stewards at Copp Tree Company and McFerridge Tree Service who both stated that tree roots grow slowly and it is not likely that further sidewalk damage would occur in 7-10 years, if at all. Final determination would come from reviewing the roots.
4) **Wheel Chair Accessiblity** would be accomplished through redoing the sidewalk. Met with the person who evaluates whether a repair is wheelchair accessibile. She said this solution would be acceptable. She also indicated that in walking with a cane the half-mile to our house, she encountered at least five areas of sidewalk that were not accessible to wheelchairs. On the same street that children walk to school in the mornings, one owner has repaved the sidewalk and parked multiple cars so the sidewalk cannot be used (picture below w tulip tree in bckgrnd) and further up, at Sweet Bites Café, with extensive daily foot traffic the sidewalk is barely 24" wide for over 20'. It is not clear why a two foot bump will cause the town to consider cutting down a 60' tree, while 20' of extremely narrow, difficult to pass, heavily trafficked sidewalk will get overlooked for fifteen years. (see pictures attached).

5) The Town Engineer had suggested Option 2 an **'Easement'** onto the Klinger property to redirect the sidewalk. Have requested that Mr. Stamski walk us through exactly what this would entail. He has not responded. Based on the drawings, however, it looks as if the sidewalk would cut into at least 30' of our property to redirect the sidewalk. This is the area where there is a 60' garden. So it would cut the garden in half. Our living room is also about 8' from our garden. So the 'easement' would cut through half our garden and bring strudents within five feet of our living room on a daily basis. For this 'Easement' will the town pay for this access? What if we want to sell our property, will the Town let us revoke the 'easement'?

This Tulip Tree was planted by the Nylander's in the early 1960's. It is over fifty years old, sixty feet tall and is one of the few Tulip Trees in all of Acton. To cut this tree down would have both a negative aesthetic and environmental impact on the neighborhood. The towns of Boston, Cambridge and Concord, for example, routinely come up with strategies to save and maintain historic trees in their neighborhoods. Am confident that the Town of Acton will be able to do the same.

Over 40 concerned citizens in the neighborhood have expressed concern over the response from the Town. Journalist from the Beacon have also interviewed the owners regarding the Tulip Tree. So it is likely with more exposure there will be even more concern about alternatives to removing the tree.

Thank you for your time. (routinely blocked sidewalk picture below, Tulip tree in background)



MICHAEL KLINGER
239 ARLINGTON STREET, ACTON, MA 01720
MKLINGER@ANZUGLOBAL.COM
http://www.anzuglobal.com/
PHONE: 978-263-7925
FAX: 978-429-0671

From: Bruce Stamski [mailto:bstamski@acton-ma.gov]
Sent: Wednesday, July 22, 2009 12:00 PM
To: Manager Department; Steve Ledoux; Municipal Properties Department
Cc: 'trdoolit@mac.com'; 'mklinger@anzuglobal.com'
Subject: FW: Spruce Street Sidewalk options

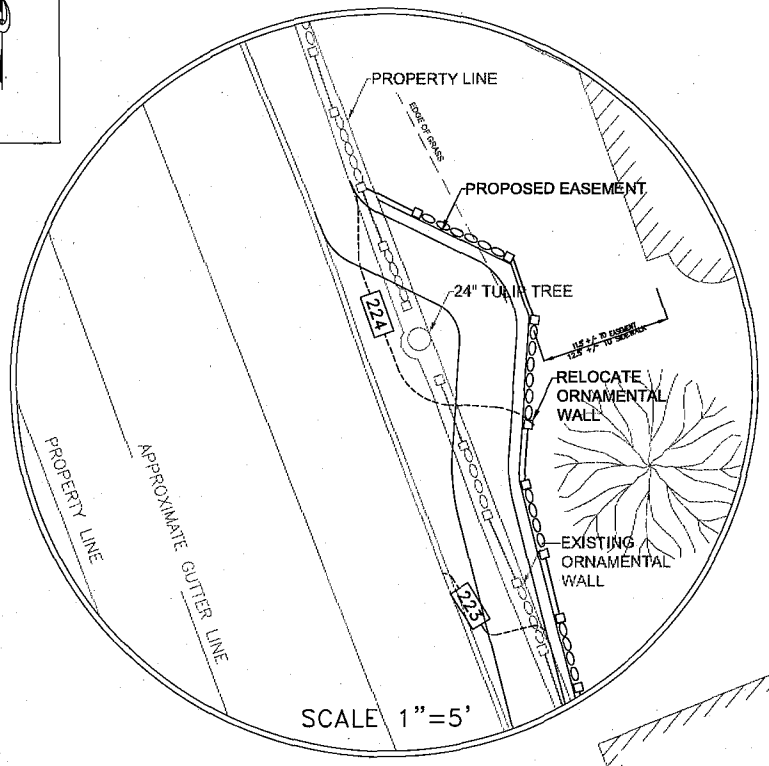
Steve,
Per Selectwoman's Friedrich's request I am providing this update on the tulip tree.
The Engineering Department has identified 3 options.
Option 1- Remove the tree and plant another tree in a suitable location. $2000
Option 2. Obtain an easement from the abutter (the Klingers)and relocate the sidewalk behind the tree. $3500
Option 3. Rebuild 133 feet of Spruce Street and sidewalk $17,000.

Options 2 and 3 are shown on the attached Plan.

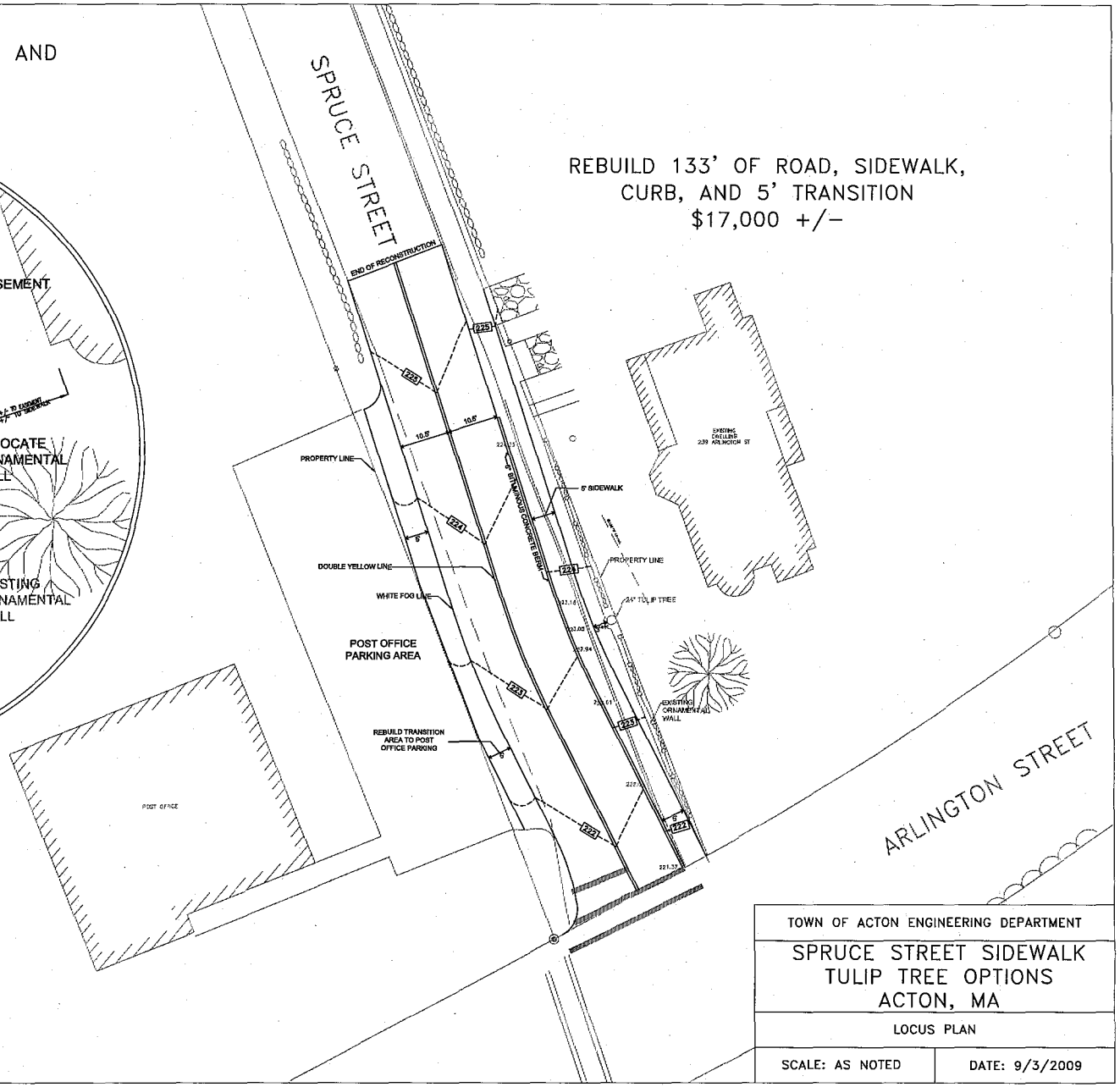
Mr. Doolittle has not responded to the communication below. I do not know if he has obtained the interpretation of the regulations needed or if he still wants to pursue his ideas with the Board. We will be available to dig around the tree anytime. I have copied him on this email

Engineering Department Proposals

REBUILD 50' OF SIDEWALK, REMOVE AND REPLACE ORNAMENTAL WALL
$3,500 +/-



REBUILD 133' OF ROAD, SIDEWALK, CURB, AND 5' TRANSITION
$17,000 +/-



GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)

P:\Drawings\Arlington St - Spruce St - Intersection - 1995\ARL-SPR-2009-09-03.dwg

TOWN OF ACTON ENGINEERING DEPARTMENT

SPRUCE STREET SIDEWALK TULIP TREE OPTIONS ACTON, MA

LOCUS PLAN

SCALE: AS NOTED | DATE: 9/3/2009